

## RF Exposure Report

**Report No.:** SA140812C13F

**FCC ID:** PY314100252

**Test Model:** C7100V-100NAS

**Received Date:** Jan. 16, 2017

**Test Date:** Jan. 20, 2017

**Issued Date:** Feb. 02, 2017

**Applicant:** NETGEAR INC.

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

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### Release Control Record

Issue No.	Description	Date Issued
SA140812C13F	Original release.	Feb. 02, 2017

## 1 Certificate of Conformity

**Product:** Wireless Cable Data Gateway

**Brand:** Netgear

**Test Model:** C7100V-100NAS

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR INC.

**Test Date:** Jan. 20, 2017

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Wendy Wu , **Date:** Feb. 02, 2017  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** Feb. 02, 2017  
May Chen / Manager

## 2 RF Exposure

### 2.1 Limits For Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 25cm away from the body of the user.

So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

2.4GHz antenna					
No.	Transmitter Circuit	Gain (dBi) (Include cable loss)	Frequency range (GHz to GHz)	Antenna Type	Connector Type
1	0	2.07	2.4~2.4835	PIFA	i-pex(MHF)
2	1	2.07	2.4~2.4835	PIFA	i-pex(MHF)
3	2	2.07	2.4~2.4835	PIFA	i-pex(MHF)
5GHz antenna					
No.	Transmitter Circuit	Gain (dBi) (Include cable loss)	Frequency range (GHz to GHz)	Antenna Type	Connector Type
4	0	3.33	5.15~5.25	PIFA	i-pex(MHF)
		3.32	5.25~5.35	PIFA	i-pex(MHF)
		3.29	5.47~5.725	PIFA	i-pex(MHF)
		3.28	5.725~5.850	PIFA	i-pex(MHF)
5	1	3.33	5.15~5.25	PIFA	i-pex(MHF)
		3.32	5.25~5.35	PIFA	i-pex(MHF)
		3.29	5.47~5.725	PIFA	i-pex(MHF)
		3.28	5.725~5.850	PIFA	i-pex(MHF)
6	2	3.33	5.15~5.25	PIFA	i-pex(MHF)
		3.32	5.25~5.35	PIFA	i-pex(MHF)
		3.29	5.47~5.725	PIFA	i-pex(MHF)
		3.28	5.725~5.850	PIFA	i-pex(MHF)

## 2.5 Calculation Result Of Maximum Conducted Power

For 2.4GHz data was copied from the original test report (Report No.: SA140812C13C)

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	713.576	6.84	25	0.43888	1
5180-5240	603.761	8.1	25	0.49633	1
5745-5825	605.463	8.05	25	0.49204	1

NOTE:

2.4GHz: Directional gain = 2.07dBi + 10log(3) = 6.84dBi

5GHz:

For UNII-1: Directional gain = 3.33dBi + 10log(3) = 8.1dBi

For UNII-3: Directional gain = 3.28dBi + 10log(3) = 8.05dBi

### Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.43888 / 1 + 0.49633 / 1 = 0.93521

**Therefore the maximum calculations of above situations are less than the "1" limit.**

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